CMS Software Support at FNAL Status and Plans

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Areas of Support:

- General Environment Setup
- Software Installations
- Source Code Management
- Build System
- Software Distribution
- Validation, Tests
- Tools
- Data Access
- Release Management
- User Help

General Environment Setup

- Currently available environments:

http://uscms.org/SoftwareComputing/UserComputing/GeneralSetup.html

- fnal *(AFS) :* - production certified ORCA, OSCAR (old)
  - CMSSW pre-releases: built from source
- uaf *(Ibrix):* - production certified releases
  - all new releases
  - debug releases
- cern *(CERN via AFS) :* - available, but not exposed to the users.
  - all releases and pre-releases at CERN
- Added support for bash users.

Software Installations

- Driven by the local needs
- Legacy software (*ORCA, OSCAR,..*) - installed from *rpms* using *xcmsi. Debug* releases are built locally from sources.
- New Offline software (CMSSW) - built locally from sources. Debug libraries are provided as different scram architecture (same as for LCG). External tools are installed from *rpms*.

Source code management

- Scripts enable access to *kserver* and *pserver* at CERN CVS repository *cmscvs.cern.ch*. Write access needs to be granted by the subsystem responsible.
  http://cmsdoc.cern.ch/swdev/viewcvs/viewcvs.cgi/?cvsroot=ORCA
- USCMS repository on *cdcvs.fnal.gov* server for locally developed projects:

CM, CalibrationDB, DAR, DPE-cache,
MCPS, MOPService, MajorTom,
PoolRunjob, RunJobService,
cmc-hcal-radsource-led-laser,
cms-database-data, cms-database-projects,
cms-pixel-construction, cms_admin,
cms_hcal_db, cms_pixel_db

http://cdcvs0.fnal.gov/cgi-bin/public-cvs/cvsweb-public.cgi/?cvsroot=uscms

Build System

- SCRAM V0_20_0
  - Available as *scram*
  - User needs to manually set *$SCRAM_ARCH*
- SCRAM V1_0_1
  - Available as *scramv1*
  - Architecture is automatically defined
- *BuildFile* syntax in V0 and V1 is incompatible !
- Project areas in V0 and V1 are incompatible !
- SCRAM V0 is no more supported, but still used in old legacy software.
- All CMS projects have migrated onto SCRAM V1.

Software Distribution

- xcmsi tool : http://cmsdoc.cern.ch/cms/oo/repos_standalone/download/
- GUI and command line interface for easy install and update of CMS software and externals from *rpms*.
- *Oracle* is not distributed due to license issues. Dummy configuration is provided to satisfy projects requirements.
- *Local installation* on user's desktop is possible without root privileges, provided there is enough disk space and memory. Already downloaded *rpm* used for the public installations are available on the *uaf.*
- *Fermi Linux 3.0.4* and *CMS desktop Configuration* are adjusted to provide all necessary pre-requisites.
- New: reached an agreement with *xcmsi* developers to package *CMSconfiguration* with a separate *tag*. This will provide external tools for the local builds from sources.

Validation, tests

Current validation and tests are done on a best effort basis:

- For newly installed software usually only minimal set of tests is executed manually.
- Tests are occasionally repeated, in case of changes on the facilities side, or on request.
- More thorough testing is performed when there is a need to troubleshoot user's problems.
- Regular software tutorial go through all basic steps.

For more advanced testing we need automated tools !

- Current plan: to see what CERN will come up with: there is a work going on automated builds and tests

Tools

- Standard tools coming with the CMS software are available in the user's working environment
- OVAL validation tool is installed and configured locally both for *scram* V0 and V1 based projects.
- General tools, that are usually installed in system area, may be requested through *helpdesk@fnal.gov*, and may included into the CMS desktop configuration.

Data access

- Managed by the Facility group.

Release management

- Intended only for CMSSW, and new Offline software.
- Policies for development support are under discussion.
- In the future local builds from sources are foreseen for all releases and for the pre-releases, as necessary.
- Release management will be done in close coordination with CERN.
- As the CMSSW will grow, the builds will be moved from AFS onto Ibrix space.
- Debug builds in CMSSW are possible within the same release via different architecture.

User Help

- *Currently done on best effort basis*
- Many new projects, many newcomers …
- A few hints to improve the turn-around:
  - Users are encouraged to discuss general problems via *lpc-howto* mailing list to spread the knowledge.
  - Individual problem ought to be reported to helpdesk@fnal.gov. This will insure that group of experts will see the thread. In many cases this will also shorten the response time.
  - Excellent tutorials and documentation are provided by Hans on the USCMS web pages.
- Waiting for a new LPC helpdesk person to arrive…